Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

the following headings: dug wells, bored wells, drilled wells, driven wells, springs, rivers, surface reservoirs, and cisterns. Some of the general conclusions are as follows: Both farm and city are suffering from the careless management of rural sanitation. Exhaustive data upon 79 carefully selected and representative rural water supplies show that 20 were good and 59 polluted, usually because of careless or ignorant management. Some of the polluted wells are so located that even extreme care would not make them safe, but a large majority of them could be made safe. The rivers, surface reservoirs, and cisterns are all polluted, and it is doubtful whether satisfactory supplies can be secured for farm use from such sources, except by disinfection. During the investigation 23 of the farms examined showed a record of typhoid fever. It is stated that "the protection of farm supplies by common-sense methods, obvious to anyone who will try to discover the dangers incident to his own water supply, would render safe the majority of the farm supplies which are now polluted."—J. M. C.

Ferments of resting seeds.—Miss WHITE[24] has shown that the enzymes present in seeds of wheat, maize, barley, oats, and rye retain their activity long after the power of germination of the seeds has disappeared. Diastatic and proteolytic enzymes were shown to be present in wheat after twenty years of storage, and in oats, rye, and barley after eight to ten years of storage, although the seeds had lost their power of germinating. The enzymes persisted apparently unaffected by the long period of storage. The resistance of the enzymes to heat was also tested. In a moist condition all the enzymes are destroyed at 100°, but in a dry state they can resist higher temperatures. Pepsin was destroyed in one hour at 124°, erepsin in one hour at 124°–128°, and diastase at 124°–131.° Both as to duration of time and effects of heat the enzymes are more persistent than the power of germination, showing that failure to germinate is not necessarily correlated with loss of enzymes. In the final part of the paper the respiratory activity of resting seeds is taken up. Many air-dried seeds give off appreciable quantities of carbon dioxid, but others show no respiration. When seeds are moderately desiccated at 45° all respiration ceases.—H. HASSELBRING.

Position of chloroplasts.—SENN'S continued investigations[25] on some details of the position of chloroplasts offer opportunity to call attention to his independently published work,[26] which was not received by the GAZETTE. In his last contribution, after alluding to certain adverse criticisms on his former results, he reports investigations on the winter position of the chloroplasts in the palisade cells of winter-green foliage. He concludes that the heaping up of the chloroplasts in the bottom of the palisades is a local effect of the frost, which induces in the chloroplasts, and perhaps in the semifluid protoplasm also, a negative thermotactic migration.

---

[24] WHITE, MISS JEAN, The ferments and latent life of resting seeds. Proc. Roy. Soc. B **81**:417–442. 1909.

[25] SENN, G., Weitere Untersuchungen über die Gestalts- und Lageveränderung der Chromatophoren. Ber. Deutsch. Bot. Gesells. **27**:(12)–(27). 1909.

[26] ———, Die Gestalts- und Lageveränderung der Pflanzen-Chromatophoren. Leipzig: Wilhelm Engelmann. 1908.

SENN has also studied the migration of one of the chloroplasts of *Synedra Ulna* after division. The division of the diatom is of course longitudinal, while the two chromatophores divide transversely. One of each new pair, therefore, must move diagonally from one end of the old valve to the face of the new, elongating at the same time, while its fellow merely elongates to fill the old valve. The movement seems to be a true migration, not simultaneous in all parts of the chloroplast, but progressive while the elongation is going on.—C. R. B.

Coloring matter of tomato.—WILLSTÄTTER and ESCHER[27] have investigated the coloring matter of the tomato and come to the conclusion that it is a compound isomeric with carotin, but not identical with it as other investigators have claimed. The coloring matter, for which they retain SCHUNCK'S name lycopin, was extracted from both fresh and preserved tomatoes. The yield from 135^{kg} fresh tomatoes was 2.7^{gm}, and from 74^{kg} preserved tomatoes 11^{gm}. The tomatoes are dried by repeated washing with alcohol, which is finally pressed out. The residue is further dried on a water bath, ground to powder, and extracted with carbon bisulfid, which is driven off under reduced pressure. After being washed with alcohol and petroleum ether, the raw lycopin was most advantageously recrystallized from gasoline. The empirical formula is C_5H_7, and the molecular formula $C_{40}H_{56}$ corresponds with carotin. Lycopin differs from carotin, however, in its crystal form and other physical properties, and in its chemical behavior toward oxygen and halogens. Both substances undergo auto-oxidation, but the quantities of oxygen absorbed differ in the two cases.—H. HASSELBRING.

Plant succession in Nova Scotia.—TRANSEAU[28] has outlined the succession of plant societies found on a portion of the southwestern coast of Nova Scotia. Several lines of physiographic succession have been investigated, and all are found to lead to the Picea formation, a forest association dominated by *Picea mariana* with a small percentage of *Abies balsamea* and *Picea canadensis*. The marine line of succession leads from the Laminaria and Fucus formations through a salt marsh with typical associations passing through an Alnus-Myrica shrub association to the final forest stage. The hydrophytic series has the same fate, the Sphagnum and Larix associations being two stages which usually precede the spruce. From the dry beach with Ammophila and Atriplex the transition is through the Alnus-Myrica association to the Picea forest. The final coniferous association varies considerably in density, but the trees are seldom more than 10^{m} high; geographically it belongs to the author's northeastern conifer forest center.—GEO. D. FULLER.

---

[27] WILLSTÄTTER, R., AND ESCHER, H. H., Ueber den Farbstoff der Tomate. Zeit. Physiol. Chemie 64:47–61. *pl. 1. figs. 1.* 1910.

[28] TRANSEAU, EDGAR N., Successional relations of the vegetation about Yarmouth, Nova Scotia. Plant World **12**:271–281. *figs. 4.* 1909.